

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Original)** A method for genetically engineering a cell to regulate the expression of a target gene, the method comprising introducing into the cell a regulatably expressible nucleic acid encoding a fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the composite DNA binding domain:
 - (a) binds to the target gene, and
 - (b) contains at least two nucleic acid-binding domains which:
 - (i) do not occur in the same protein in nature,
 - (ii) do not occur in the same protein in the order in which they are present in the composite DNA binding domain, or
 - (iii) do not occur in nature with the same spacing that is present in the composite DNA binding domain.
2. **(Original)** The method of claim 1 in which the composite DNA binding domain contains one or more zinc finger domains.
3. **(Original)** The method of claim 1 in which the cell is additionally engineered by the introduction thereto of a heterologous target gene linked to a nucleic acid sequence to which the fusion protein binds.
4. **(Original)** The method of claim 1 in which the target gene is an endogenous gene of the genetically engineered cell.
5. **(Original)** The method of claim 4 in which the target gene is linked to an endogenous nucleotide sequence to which the composite DNA binding domain of the fusion protein binds.
6. **(Original)** The method of any of claims 1 - 5 in which the transcription regulatory domain is a transcription activation domain.

7. **(Original)** The method of claim 6 wherein the transcription activation domain is a VP16 or p65 transcription activation domain.
8. **(Original)** The method of any of claims 1 - 5 in which the transcription regulatory domain is a transcription repression domain.
9. **(Original)** The method of any of claims 1 - 5 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.
10. **(Original)** The method of claim 6 in which regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.
11. **(Original)** The method of claim 7 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.
12. **(Original)** The method of claim 8 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.
- 13-15. **(Cancelled)**
16. **(Original)** A method for regulating the expression of a target gene in a cell, the method comprising regulatably expressing a nucleic acid encoding a fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the composite DNA binding domain:
- (a) binds to the target gene, and
 - (b) contains at least two nucleic acid-binding domains which:
 - (i) do not occur in the same protein in nature,
 - (ii) do not occur in the same protein in the order in which they are present in the composite DNA binding domain, or
 - (iii) do not occur in nature with the same spacing that is present in the

composite DNA binding domain.

17. **(Original)** The method of claim 16 in which the composite DNA binding domain contains one or more zinc finger domains.
18. **(Original)** The method of claim 16 in which the cell is additionally engineered by the introduction thereto of a heterologous target gene linked to a nucleic acid sequence to which the fusion protein binds.
19. **(Original)** The method of claim 16 in which the target gene is an endogenous gene of the genetically engineered cell.
20. **(Original)** The method of claim 19 in which the target gene is linked to an endogenous nucleotide sequence to which the composite DNA binding domain of the fusion protein binds.
21. **(Original)** The method of any of claims 16 - 20 in which the transcription regulatory domain is a transcription activation domain.
22. **(Original)** The method of claim 21 wherein the transcription activation domain is a VP16 or p65 transcription activation domain.
23. **(Original)** The method of any of claims 16 - 20 in which the transcription regulatory domain is a transcription repression domain.
24. **(Original)** The method of any of claims 16 - 20 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.
25. **(Original)** The method of claim 21 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.

26. **(Original)** The method of claim 22 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.

27. **(Original)** The method of claim 23 in which the regulatably expressible nucleic acid encoding the fusion protein is introduced into the cell *ex vivo*.

28-30. **(Cancelled)**

31. **(Original)** A cell produced by the method of claim 1, and progeny thereof, containing a regulatably expressible nucleic acid encoding the fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the fusion protein binds to a nucleic acid sequence linked to a target gene.

32. **(Original)** The cell of claim 31 in which the composite DNA binding domain contains one or more zinc finger domains.

33. **(Original)** The cell of claim 31 in which the target gene is a heterologous gene linked to a nucleic acid sequence to which the fusion protein binds.

34. **(Previously Presented)** The cell of claim 31 in which the target gene is an endogenous nucleotide sequence.

35. **(Original)** The cell of claim 34 in which the target gene is linked to an endogenous nucleotide sequence to which the composite DNA binding domain of the fusion protein binds.

36. **(Original)** The cell of any of claims 31 – 35 in which the transcription regulatory domain is a transcription activation domain.

37. **(Original)** The cell of claim 36 wherein the transcription activation domain is a VP16 or p65 transcription activation domain.

38. **(Original)** The cell of any of claims 31 – 35 in which the transcription regulatory domain is a transcription repression domain.

39-46. **(Cancelled)**

47. **(New)** The method of claim 1 in which the at least two nucleic acid-binding domains are separated by at least one amino acid.

48. **(New)** The method of claim 1 in which the at least two nucleic acid-binding domains are separated by 1, 2, 3, 4 or 5 amino acids.

49. **(New)** The method of claim 1 in which the at least two nucleic acid-binding domains are separated by a distance of less than about 50 Å.

50. **(New)** The method of claim 1 in which the at least two nucleic acid-binding domains are separated by a distance of less than about 10 Å.

51. **(New)** The method of claim 16 in which the at least two nucleic acid-binding domains are separated by at least one amino acid.

52. **(New)** The method of claim 16 in which the at least two nucleic acid-binding domains are separated by 1, 2, 3, 4 or 5 amino acids.

53. **(New)** The method of claim 16 in which the at least two nucleic acid-binding domains are separated by a distance of less than about 50 Å.

54. **(New)** The method of claim 16 in which the at least two nucleic acid-binding domains are separated by a distance of less than about 10 Å.

55. **(New)** A cell produced by the method of claim 47, and progeny thereof, containing a regulatably expressible nucleic acid encoding the fusion protein comprising a transcription

regulatory domain and a composite DNA binding domain, wherein the fusion protein binds to a nucleic acid sequence linked to a target gene.

56. (New) A cell produced by the method of claim 48, and progeny thereof, containing a regulatably expressible nucleic acid encoding the fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the fusion protein binds to a nucleic acid sequence linked to a target gene.

57. (New) A cell produced by the method of claim 49, and progeny thereof, containing a regulatably expressible nucleic acid encoding the fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the fusion protein binds to a nucleic acid sequence linked to a target gene.

58. (New) A cell produced by the method of claim 50, and progeny thereof, containing a regulatably expressible nucleic acid encoding the fusion protein comprising a transcription regulatory domain and a composite DNA binding domain, wherein the fusion protein binds to a nucleic acid sequence linked to a target gene.